

Our Ideal

AT the dawn of civilization man lit a fire. It cooked his food; it warmed his body; it protected him from preying animals in the night.

The force within that fire which separated man from savagery in the beginning, is the force which today maintains civilization in the most densely populated sections on the earth. That force is Heat—prime mover of life and greatest of all servants in the march of human progress.

Perfectly to control this force in its service to the heating needs of men, is the ideal of the American Radiator Company. We feel that there is no service of greater consequence to the individual, the family and the nation.

It is with this ideal ever in mind that our heating apparatus are designed and made. They are products of scientific research and long practical experience. We recommend them as representing, in their respective fields, the best values that can be obtained.

IDEAL WATER TUBE BOILER



REG. U. S. PAT. OFF

AMERICAN RADIATOR COMPANY

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Ideal Water Tube Boilers



23-Inch



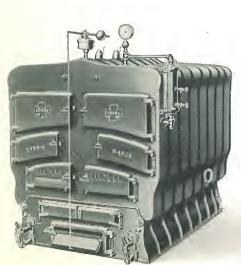
29-Inch



36-Inch



Designed to serve the heating needs of larger residences ~ apartment houses ~ hotels ~ churches ~ banks ~ clubs ~ stores ~ theatres ~ and public buildings ~ ~



48-Inch



79-Inch



29" IDEAL WATER TUBE BOILER

IDEAL WATER TUBE BOILERS ARE SCIENTIFICALLY DESIGNED AND CON-STRUCTED TO RENDER EFFICIENT, DURABLE SERVICE WITH THE MINIMUM OF ATTENTION. NOTE THE STURDY, CLEAN-CUT APPEARANCE, ABSENCE OF OLD-FASHIONED, BOTHERSOME CHAINS, THE UNUSUALLY HEAVY DOORS, PLATE WORK AND HINGE PINS, AND FREEDOM FROM MANIFOLDS AND OUTSIDE PIPING

THE IDEAL WATER TUBE BOILER IS A PERMANENT INVESTMENT

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F the entire equipment that goes into any house, there is no single item which means so much to the owner from the investment point of view as the heating boiler.

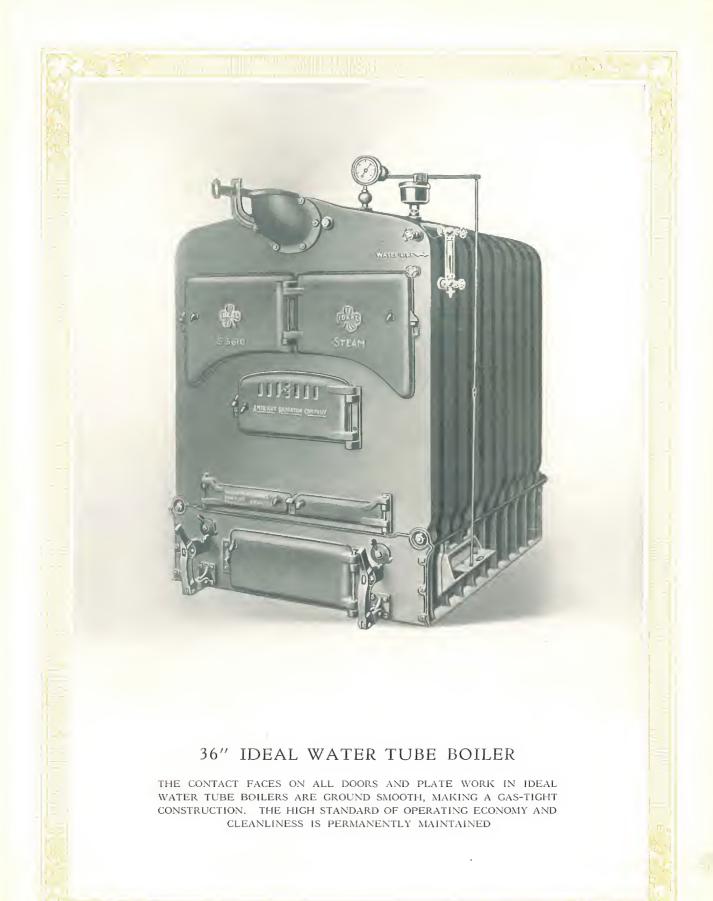
Here is an item, to secure the service of which necessarily involves a certain initial expenditure, and to operate which means yearly maintenance costs in the form of fuel and labor. In return, the boiler is expected to generate the heat to keep the building comfortably warm. The selection of a specific boiler then, becomes a question of balancing service against expenditure. Carefully selected, a boiler means money well invested; but a poorly selected plant becomes a source of endless regret.

The Ideal Water Tube Boiler is a sound, permanent investment. Very reasonable in its initial cost, it operates with unusual economy of coal consumption, and without requiring skilled attendance. It will serve efficiently throughout the lifetime of the building it occupies, and it may be relied upon always to produce quick heating responses to every need.

Designed to Meet the Heating Requirements of all Types of Buildings

The Ideal Water Tube Boiler is the perfected product of many years of experience. To the solution of actual heating problems as they have presented themselves in buildings of all types and sizes, in all sections of the country, has been brought the service of our staff of heating engineers and the experimental equipment of the largest heating laboratory in the world—the Institute of Thermal Research. Today, the Ideal Water Tube Boiler embodies every desirable feature adapting it especially to the actual working conditions obtaining in its field of service.

The boiler is made in a complete range of sizes. No building is too large to secure its heating advantages.



Quickly and Inexpensively Installed in New or Old Buildings

THE illustration at the bottom of the page shows how the Ideal Water Tube Boiler is made up of individual sections. These sections, even of the largest boiler, may be carried into the cellar through any average-sized doorway or elevator hatch. No tearing down of walls or ripping up of floors is necessary; nor cloes the boiler require, for erection, any special masonry in the way of pits or brick setting.



Sections of all boilers can be easily moved through the average doorway



Push nipple used to connect sections, latheturned to the thousandth part of an inch

The constructional advantage of the Ideal Water Tube Boiler in this respect, commends it especially to owners of old buildings as well as new. In both instances an installation cost of considerable magnitude is eliminated.

Enlarged at Any Time to Meet New Heating Requirements

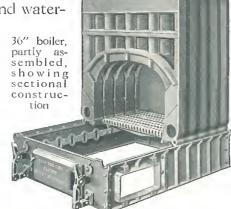
The sections of the boiler are connected by push nipples, lathe-turned to the thousandth part

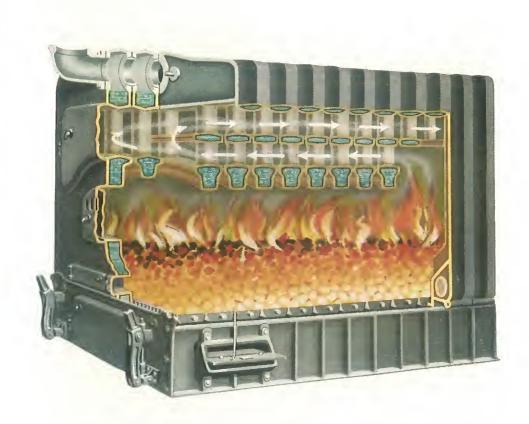
of an inch, which fit snugly into the carefully machined holes at the top and base of the sections. These nipples are made of

the same carefully selected iron mixture that is used in the sections. Durability of service and permanently steam- and water-

tight connections are insured.

Should it be desired at any time to increase the size of the boiler to meet an enlarged heating requirement, new sections may be readily and inexpensively added at the rear; or if necessary, a battery of two or more boilers can be installed.





FRONT-TO-REAR CROSS-SECTION VIEW OF THE 36" IDEAL WATER TUBE BOILER

THE REFINED BALANCE IN THE DESIGN OF THE GRATE AREA, FIRE CONTACT HEATING SURFACE, FLUE AREA AND GAS TRAVEL; THE MULTIPLICITY OF TUBULAR WATERWAYS WHICH DIVIDE THE WATER INTO MANY THIN STREAMS, AND THE UNUSUALLY LARGE HEAT-ABSORBING SURFACE, ACCOMPLISH QUICK, DEPENDABLE, AND EFFICIENT HEATING FOR ALL IDEAL WATER TUBE BOILERS

QUICK HEATING RESPONSES AND DEPENDABLE, EFFICIENT SERVICE

It is highly important that a boiler intended for an apartment, hotel, store, industrial building, public building, etc., be capable of developing a large heat output within a very short space of time to meet rapidly fluctuating heating loads, and that it be able to perform in this respect and operate also throughout the normal part of the heating year, with a definite regard for economy in fuel consumption.

The rapidity with which a boiler generates steam or vapor, or produces hot water at its outlet, is a function of no one single feature of its design, but depends, rather, upon the relative proportions existing between all features, and the construction of the boiler. There are not twenty or thirty best designs; there is one—and it may be arrived at and recognized only through very careful experimentation and testing conducted by engineers of skill and practical experience.

The Ideal Water Tube Boiler is a highly refined product of extensive tests carried out under the supervision of our engineers, supplemented by many years of service under varying conditions, in buildings of all kinds and sizes.

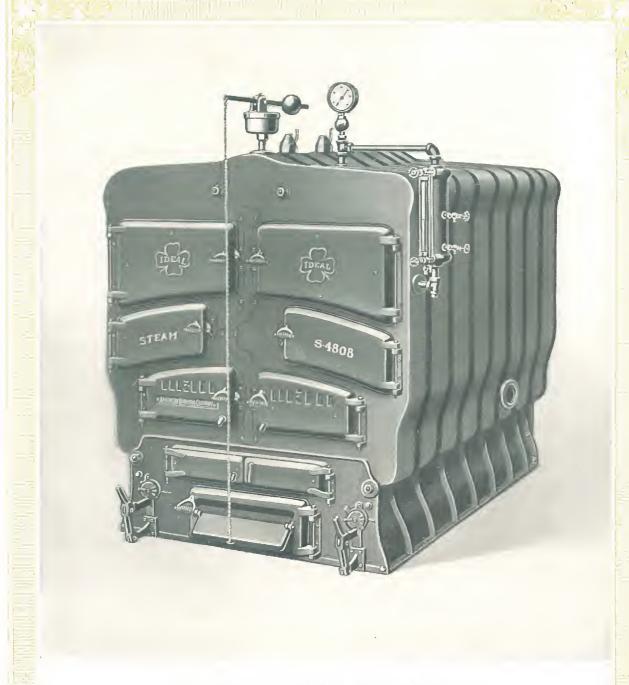
The boiler is well known for its unusual "pick-up," heat-generating capacity, and for its continued economy of fuel consumption with the minimum amount of

Unrestricted Internal Water Flow and Long Flue Travel

attention.

Outstanding among the features effecting the extraordinarily quick heating response and economical operation of the Ideal Water Tube Boiler, is its extensive array of water-backed vertical tubes, as shown in the illustrations. These tubes divide the

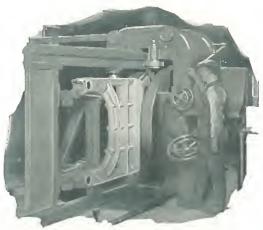




48" IDEAL WATER TUBE BOILER

The $48^{\prime\prime}$ size ideal water tube boiler is one of the oldest and best known in the series. Its special gas travel is described on page thirteen. In point of operating efficiency and sturdy construction, the $48^{\prime\prime}$ boiler is the same as the other units in the series

body of water in the boiler into many thin streams, and intercept the horizontal flow of the hot gases in the upper and lower flue galleries. As the broad sheet of water surrounding the sides and top of the combustion chamber absorbs the radiant heat of the fire, it quickly rises through the vertical tubes, establishing a flow at right angles to the movement of the gases.



On special, immense machinery, contact faces on all sections are machine-ground to smoothness

The long travel of the hot gases, and the relation of their direction of flow to that of the water, effects a rapid heat transmission from the gases to the water. The waterways throughout are smooth, and the steam disengaging area is large. Quick heating, dry steam generation, and the utilization of the heating value of the fuel to the fullest possible extent, are the results.



ILLUSTRATING THE GAS TRAVEL IN THE $48^{\prime\prime}$ BOILER

Rising out of the combustion chamber at the rear, the gases enter the two outside flues and travel forward to the front of the boiler where they turn and enter the three center flue passageways, proceeding to the rear where they pass to the smokehood. Relatively, the proportion of indirect heat-absorbing surface is the same as in the other sizes of Ideal Water Tube Boilers.



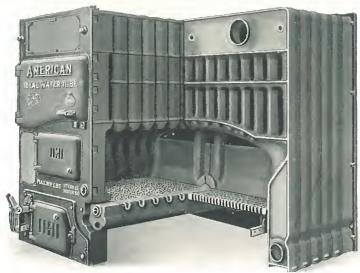
79" IDEAL WATER TUBE BOILER

MANY OF THE LARGEST BUILDINGS THROUGHOUT THE COUNTRY ARE HEATED BY THE 79" IDEAL WATER TUBE BOILER IN BATTERY. NO BUILDING IS TOO LARGE FOR ITS USE. THESE BOILERS ARE WATER-BACKED TO THE FLOOR AND HAVE A VERY LOW WATER LINE. THEY ARE COMPACT, CLEAN-CUT, EASILY ATTENDED, AND OPERATE WITH A MARKED ECONOMY OF FUEL CONSUMPTION

Gas-Tight Iron-to-Iron Construction Insures Permanent Economy

The Ideal Water Tube Boiler incorporates one exclusive feature of construction that insures high operating efficiency during its lifetime—which is that of the building it serves.

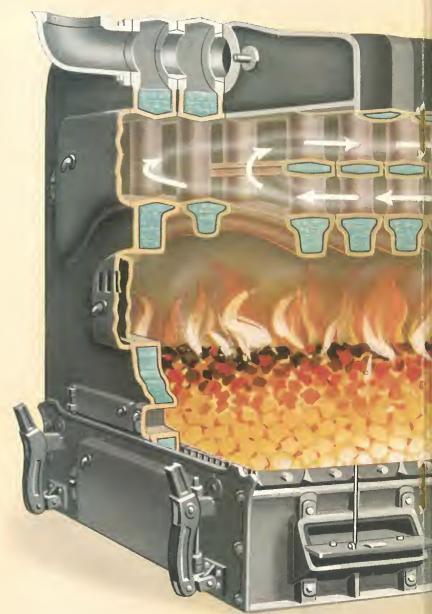
All contacting surfaces on the individual sections are machineground to smoothness on special grinding machines. The illustration shows the process. Held rigidly in great iron jaws, each section is worked back and forth through two huge carborundum wheels, until its contacting faces are ground straight and virtually as smooth as marble. When the sections are assembled, therefore, their iron-to-iron contact joints form a gas-tight construction. The hot gases rising out of the combustion chamber are forced to travel through the entire flue course: forward through the lower gallery to the front of the boiler, thence upward and backward through the upper gallery to the smokehood at the rear—a distance twice the length of the boiler. Because of the gas-tight construction, it is impossible for the gases to short-circuit to the smokehood from any point. The construction is permanent; and the utilization of the heating value of the fuel supplied to the boiler in the most efficient degree, is therefore also permanent.



THREE-QUARTER SECTIONAL VIEW OF 79" IDEAL WATER TUBE BOILER

This boiler is cast in half-section units with water-backed legs extending to the floor. Note also that the center grate support is water-backed throughout and cannot burn out. The grates are wide and are made of heavy cast iron. All contact faces on sections, doors and plate work are machined to smoothness. Each detail is carefully designed and constructed to insure efficient heating and durable service.

SECTIONAL VIEW ILLUSTRATING INTE OF THE IDEAL WAY



The Ideal Water Tube Boiler has derived its name from the basic characteristic of its design—the extensive series of water-backed vertical tubes which divide the body of water into many thin streams, and expose an unusually large amount of heat-absorbing surface to the fire and the hot gases of combustion. This design, united with the other features of the boiler—

ERNAL DESIGN AND CONSTRUCTION TER TUBE BOILER



the scientifically balanced proportions of its grate area, direct heating surface, flue area, and gas travel; its gas-tight flue construction; its unusually heavy grates, doors, plate work, and hinge-pins; its large, substantial smokehood and automatic regulation—all unite in accomplishing quick, economical, and durable heating service with the very minimum amount of attention.

Ideal Water Tube Boilers Are As Durable As The Buildings They Serve

IT IS a satisfaction to every owner to know that his boiler will serve efficiently, year after year, without break-down. Ideal Water Tube Boilers render this kind of service. They are made of a carefully prepared iron mixture, unaffected by rust, summer dampness, gases, heat, or water. These boilers practically never wear out.

Careful Workmanship

Our factories operate on one insistent policy; the quality of Ideal Boilers shall always come first. To this end every step in their manufacture is executed with the same degree of care and skill that characterizes each feature of design. From the raw material to the finished product, every department and operation is surrounded by a careful system of inspection.

Iron Mixture

In order to insure a thoroughly homogeneous and uniform iron mixture in every boiler, daily chemical analyses are made of each lot of iron, coke and limestone, in accordance with which the relative quantities of these materials are determined before they are placed in the cupola. Then the iron mixture itself, after it has been run from the cupola, is analyzed and tested against our established standard, which is the result of many years of ex-



Chemical Laboratory for testing iron mixtures, maintained at the Institute of Thermal Research

perience in boiler making. Every precaution is taken that the casting used in each Ideal Boiler conforms to specifications.

Thorough Testing

Each section of every boiler is subjected to an individual hydraulic test of 80 pounds. Representative boilers from every run are then completely assembled and subjected to an-

other 80-pound hydraulic test. Only when it is certain that the boilers are practically perfect in every respect are they passed for shipment.

Most Easily Cared For—No Special Skill Required

WNERS of buildings requiring the services of boilers of larger heating capacities are being confronted increasingly with the problem of securing skilled attendants for boiler operation. Boilers intended for larger buildings are, of course, called upon to function under the extra burden of widely and rapidly fluctuating heating loads, and their continued, successful and economical performance depends, in most instances, upon the services of skilled operators.

No especial degree of skill whatever is required to obtain permanently satisfactory results with the Ideal Water Tube Boiler. For this the refined balance between its respective features of design is responsible. The boiler presents no more complicated problem for handling than the usual smaller type of household heating plant. The human element is virtually removed as a controlling factor of good performance.



Typical battery installation 36" Ideal Water Tube Boilers

Especially Well Adapted for Battery Installation

It is a fact rarely appreciated that a heating boiler is called upon to operate at 100% of its heat-producing capacity during a very small portion of the heating year. As a matter of fact, a boiler is obliged to function at only about 30% of its maximum heat-producing capacity during the major part of the season. And in apartments, hotels, stores, factories, churches, schools, etc., heating needs fluctuate widely during short intervals within the heating season.

For these reasons a battery of two or more Ideal Water Tube Boilers will prove more economical to use than a large single heating unit. With a battery of Ideal Boilers, only one boiler, or two, or more, according to the size of the building, need be employed during the major part of heating year. When the colder weather and extreme heating loads occur, the entire battery may be put into service. But by using only the minimum number of boilers required to meet normal requirements, as compared with the use of one large boiler, fired low, a very considerable saving both in fuel and labor is effected.

Far-sighted engineers have recognized this fact and are increasingly recommending the use of two or more Ideal Water Tube Boilers as against the use of one large single unit.



Typical battery installation 79" Ideal Water Tube Boilers

THE ARCO AUTOMATIC HEAT REGULATOR



Sectional view Arco steam pressure regulator

ALL Ideal Water Tube Steam Boilers are regularly equipped with the Arco Automatic Heat Regulator—the most highly developed regulator of its kind manufactured.

This regulator is made entirely of metal and works without friction. It has no rubber diaphragm, packing or piston joint to wear out or get out of order. The Arco bellows with its accordion sides is made of the best flexible seamless steam brass.

As durable as the boiler itself, the Regulator may be relied upon always to respond instantly and with minute precison to changes in pressure within the boiler.

Advantages of Automatic Regulation

The Regulator is set to maintain any desired pressure. After having been thus set, it assumes the entire burden of maintaining the required heat production at the boiler's outlet; and it performs this function more accurately and dependably than would be possible with continued personal attention.

Should the heat output exceed the desired point, the pressure within the boiler increases. The Arco bellows immediately contracts, and the movement is transferred, through the positive-operating levers, to the draft panel which begins to close. Decreasing the air supply thus checks the fire. Should, however, the heat output of the boiler drop below the desired point, the pressure within the boiler decreases and the reverse action takes place in the Regulator. Always, just the necessary amount of fuel is burned to keep the house comfortably warm. Thus the Arco Automatic Heat Regulator saves time, steps, and fuel.

The Ideal Water Tube Boiler designed for water installation is not regularly equipped with automatic regulation. A special Arco Automatic Heat Regulator for water is available, however, for a slight extra charge.

ABOUT RADIATION

The American Radiator—World Standard of Merit

WHEREVER direct radiation is contemplated, particular attention is directed to American Radiators. They offer definite points of advantage.

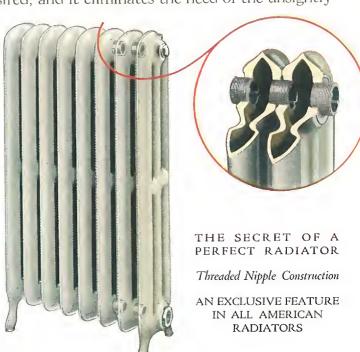
The sections of all American Radiators are joined on the inside by the special threaded nipple construction illustrated below. The nipples are made of malleable iron and are right-and left-hand threaded. On specially designed machinery the radiator sections are drawn together and joined by these nipples, in such a way as to insure automatically that each nipple is screwed an equal depth into, and has an equal grip on, each section.

This construction unites the advantages of the two basic types of mechanical connection: the faced and the threaded joint. It is the tightest and safest that can be made.

It holds the sections together in true and permanent alignment. It allows new sections readily to be added at a later time, should an extension be desired, and it eliminates the need of the unsightly

iron rods and nuts used in the ordinary radiator construction.

It has been primarily on the basis of this superior, inbuilt value that American Radiators have climbed to world supremacy. It pays to insist on American Radiators.



American Peerless Wall Radiators

Especially Designed for Industrial Buildings of all Kinds and Sizes



Section of an American Peerless Wall Radiator

NE of the first considerations in choosing radiation for any inclustrial plant is the desirability of combining adequate heating with space economy.

American Peerless Wall Radiators are made in sections in a wide range of sizes and with provisions for numerous groupings. They may, therefore, be assembled to meet any structural condition, fitting into restricted spaces under windows or between them, on ceilings, or in sky-lights.

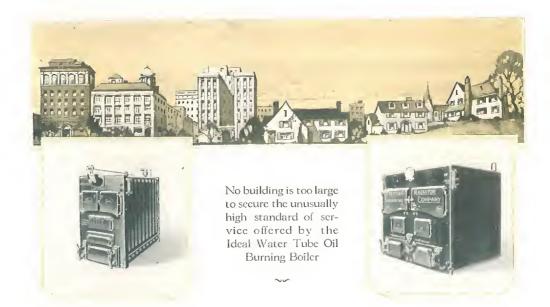
And united to this advantage is the fact that these radiators possess such an unusually high operating efficiency, that

to heat any given volume of space they actually occupy from onethird to one-half the amount of space required by other types of direct radiation. As a result, larger windows are possible, better lighting effects, cleaner and more attractive working conditions, and a better organization of the machinery of production.

These radiators may be assembled in small units. Steam can be admitted into only a limited number of units during the milder periods of the heating year, thus securing comfortable temperatures at all times with the very least consumption of fuel.

It is frequently desired, in many types of industrial plants, to utilize exhaust steam for heating purposes. American Peerless Wall Radiators are perfectly adapted to meet this requirement.

Pitting of the inner or outer surfaces of these radiators is unknown. They are thoroughly impervious to rust. By their material, design, and construction, they are a guarantee of satisfactory heating service during the entire lifetime of the building they occupy.



IDEAL WATER TUBE BOILERS FOR OIL BURNING

THE steadily increasing use of oil as a fuel for heating purposes has been accompanied by an insistent demand for a first class oil-burning boiler.

All boilers are not suited to the efficient burning of oil, and many boilers which are fairly well adapted to certain types of oil burners are not adapted to the use of others. These are facts which every prospective user of oil fuel should bear well in mind. A little care and study in the beginning will save much time and money in the end.

The Ideal Water Tube Oil Burning Boiler is probably the most popular all-round oil-burning boiler in America. Its reputation has been attained through its unique combination of features of design and construction, which adapt it excellently for oil burners of every type.

If you are particularly interested in securing the service of an oil-burning unit, write us and we shall be pleased to send you a copy of our special book entitled: "Ideal Boilers for Oil Burning," which goes fully into the subject.

Typical Ideal Water Tube Boiler Installations



Greensboro Daily News Building, Greensboro, N. C., heated by two 48" Ideal Water Tube Boilers





Boreal Club, Buffalo. N. Y., heated by one 29" Ideal Water Tube Boiler



Van Allen Motor Service, Buffalo, N. Y., heated by one 29" Ideal Water Tube Boiler





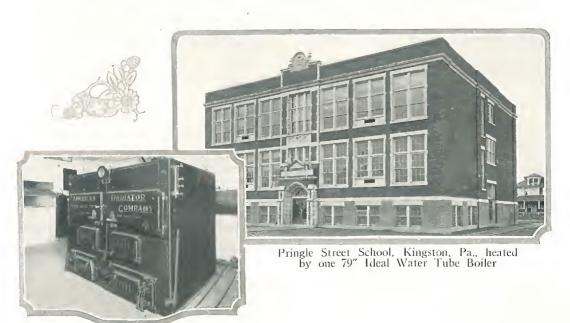
Elmwood Music Hall, Buffalo, N. Y., heated by one 65" Ideal Water Tube Boiler



Holy Trinity Lutheran Church, Buffalo, N. Y., heated by a battery of 36" Ideal Water Tube Boilers



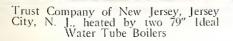
Famous Players-Paramount Film Corp., New York City, heated by two 36" Ideal Water Tube Boilers



twenty-six









Hellman Commercial Trust & Savings Bank, Los Angeles, Calif., heated by two 79" Ideal Water Tube Boilers



Chatham Court Apartments, Philadelphia, Pa.

Heated by two 79" Ideal Water Tube Boilers



Littel Building, Buffalo, N. Y., heated by a battery of two 48" Ideal Water Tube Boilers



Greenwich Savings Bank, New York City, heated by a battery of three 79" Ideal Water Tube Boilers

Ideal Water Tube Boiler Ratings and Data

23-INCH SERIES

STE Number of Boiler	AM Rating Steam Sq. Ft.	WAT Number of Boiler	ΓΕR Rating Water Sq. Ft.	Grate Area Sq. Ft.	Fuel capacity Lbs.	Total Length "L" Ins.		Inlets Number and Size		Chimney Height Feet
S-2305 S-2306 S-2307 S-2308 S-2309	600 750 900 1,050 1,200	W-2305 W-2306 W-2307 W-2308 W-2309	975 1,200 1,425 1,650 1,875	2.72 3.36 4.00 4.64 5.28	164 203 242 281 320	21 25 29 33 37	1-4 1-4 1-4 1-4 1-4	2-3 2-3 2-3 2-3 2-3 2-3	8x12 8x12 8x12 12x12 12x12	30 35 35 35 35

29-INCH SERIES

STE	AM	WAT	ER		Fuel	Total	Steam	Water	Steam	Water		
Number of Boiler	Rating Steam Sq. Ft.	Number of Boiler	Rating Water So. Ft.	Arca	ity	Length L'' Ins.	Outlets No. and Size	Outlets No. and Size				Height
S-2905	1,600	W-2905	2,600	4.84	347	30	1-5	1-5	2-4	2-5	12x16	Ft. 35
S-2906 S-2907 S-2908	2,000	W-2906 W-2907 W-2908	3,250 3,900 4,550	6.05 7.26 8.47	435 523	36 42	1-5	1-5 2-5	2-4	2-5 2-5	12x16 16x16	40 40
S-2908 S-2909 S-2910	2,800 3,200 3,600	W-2909 W-2910	5,200 5,850	9.68	611 699 787	48 54 60	1-5 2-5 2-5	2-5 2-5 2-5	2-4 2-4 2-4	2-5 2-5 2-5	16x16 16x20 16x20	50
S-2911	4.000	W-2911	6,500		875	66	2-5	2-5	2-4	2-5	20x20	60

36-INCH SERIES

CTE		111165	rco.		1		1.6.0.111		117		
STE Number of Boiler	Rating Steam Sq. Ft.	WA' Number of Boiler	Rating Water Sq. Ft.	Grate Area Sq. Ft.	Fuel Capacity Lbs.	Total Length "L" Ins.	S. & W. Outlets No. and Size	Steam Inlets No. and Size			Chimney Height Ft.
S-3605 S-3606 S-3607 S-3608 S-3609 S-3610 S-3611 S-3612 S-3613 S-3614 S-3615	2,500 3,150 3,800 4,450 5,100 5,750 6,400 7,050 7,700 8,350 9,000	W-3605 W-3606 W-3607 W-3608 W-3609 W-3610 W-3611 W-3612 W-3613 W-3614 W-3615	4,000 5,100 6,200 7,300 8,400 9,500 10,600 11,700 12,800 13,900 15,000	6.00 7.50 9.00 10.50 12.00 13.50 15.00 16.50 18.00 19.50 21.00	540 684 828 972 1,116 1,260 1,404 1,548 1,692 1,836 1,980	30 36 42 48 54 60 66 72 78 84 90	1-6 1-6 2-6 2-6 2-6 2-6 2-6 2-6 2-6 2-6 2-6	2-4 2-4 2-4 2-4 2-4 2-4 2-4 2-4 2-4 2-4	2-4	16x16 16x20 16x20 20x20 20x20 20x20 20x20 20x20 20x24 20x24 20x24 22x24	45 45 50 50 55 55 60 60 65 70

^{*}Two 3½-in. and two 4-in. †Four 3½-in. and two 4-in.

48-INCH SERIES

of	AM Rating Steam Sq. Ft.	WA' Number of Boiler	ΓER Rating Water Sq. Ft.	Grate Area Sq. Ft.	Fuel Capacity Lbs.	Total Length 'L' Ins.	S. & W. Outlets No. and Size	Steam Inlets No. and Size	Water Inlets No. and Size	Chimney	Chimney Height Ft.
S-4806 S-4807 S-4808 S-4809 S-4810 S-4811 S-4812 S-4813 S-4814	7,750 9,000 10,250 11,500 12,750 14,000 15,250 16,500 17,750	W-4806 W-1807 W-4808 W-4809 W-4810 W-4811 W-4812 W-4813 W-4814	12,500 14,500 16,500 18,500 20,500 22,500 24,500 26,500 28,500	18.00 21.60 25.20 25.20 28.80 28.80 28.80 32.40 32.40	1,475 1,770 2,065 2,065 2,360 2,360 2,360 2,655 2,655	573/4 681/2 791/4 90 1003/4 1111/2 1221/4 133 1433/4	2-6 3-6 3-6 3-6 3-6 4-6 4-6 4-6 4-6	4-4 4-4 4-4 4-4 4-4 4-4 4-4	4-6 4-6 4-6 4-6 4-6 4-6 4-6 4-6 4-6	24x24 24x24 24x24 24x28 24x28 24x28 28x28 28x28 28x32 28x32	65 70 75 80 85 95 100 105

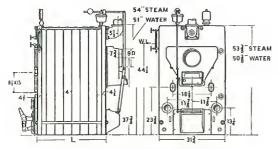
79-INCH SERIES

STE Number of Boiler	AM Rating Steam Sq. Ft.	WA' Number of Boiler	FER Rating Water Sq. Ft.	Grate Area Sq. Ft.	Total Length "L" Ins.	S. & W. Outlets Number and Size		Water Inlets Number and Size	Chimney Size Ins.	Chimney Height Ft.
S-7907 S-7908 S-7909 S-7910 S-7911 S-7912 S-7913 S-7914 S-7915 S-7916 S-7917	8,400 9,600 10,800 12,000 13,200 14,400 15,600 16,800 18,000 19,200 20,400	W-7907 W-7908 W-7909 W-7910 W-7911 W-7912 W-7913 W-7914 W-7915 W-7916 W-7917	13,440 15,360 17,280 19,200 21,120 23,040 24,960 26,880 28,800 30,720 32,640	22.96 26.24 29.52 32.80 36.08 39.36 42.64 45.92 41.00 44.28 44.28	48 54 60 66 72 78 84 90 96 102	1-10 1-10 1-10 1-10 1-10 1-10 1-10 1-10	-4 -4 -4 -4 -4 -4 -4 -4	2-10 2-10 2-10 2-10 2-10 2-10 2-10 2-10	20x24 20x24 24x24 24x24 24x28 24x28 24x28 24x28 28x28 28x28 30x30 30x30	60 65 70 75 80 85 90 95 100 105

Safety Valve sizes accord with A. S. M. E. boiler code.

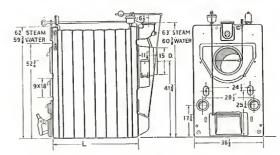
IDEAL WATER TUBE BOILER **DIMENSIONS**

23-INCH SERIES



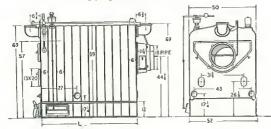
For dimension "L" see page 29

29-INCH SERIES



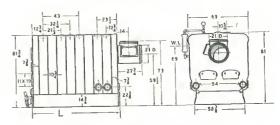
For dimension "L" see page 29

36-INCH SERIES



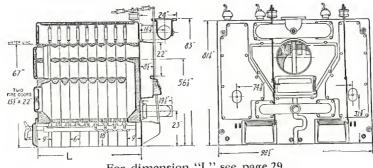
For dimension "L" see page 29

48-INCH SERIES



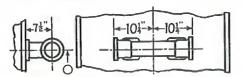
For dimension "L" see page 29

79-INCH SERIES

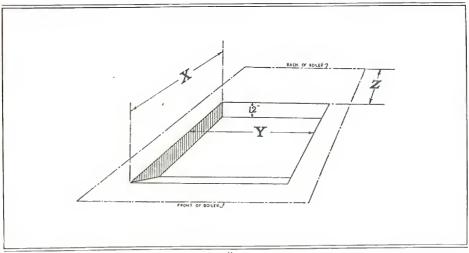


For dimension "L" see page 29

RETURN HEADER FOR WATER BOILERS



IDEAL WATER TUBE BOILER ASH PIT DIMENSIONS



Number of	Dim	ensions	in Inch	es	Number of	Dim	ensions	in Inch	
Number of Boiler	Depth	X	"Y"	Z	Boiler	Depth	X		Z
S or W-2305 S or W-2306. S or W-2307 S or W-2307 S or W-2309 S or W-2905 S or W-2906	12 12 12 12 12 12	16 20 24 28 32 24 30	18 18 18 18 18 23 23	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	S or W-4806. S or W-4807. S or W-4808. S or W-4809. S or W-4810. S or W-4811. S or W-4812. S or W-4813.	12 12 12 12 12 12 12 12	52 63 73 73 83 83 83 83	50 50 50 50 50 50 50 50	2 2 2 14 14 24 35 35
S or W-2907 S or W-2907 S or W-2908 S or W-2910 S or W-2911	12 12 12 12 12	36 42 48 54 60	23 23 23 23 23 23	33333	S or W-4814 S or W-7907 S or W-7908 S or W-7919 S or W-7910	12 12 12 12 12	94 31 37 43 49	74 74 74 74 74 74	8 8 8 8 8
S or W-3605. S or W-3606. S or W-3607. S or W-3608. S or W-3609. S or W-3610. S or W-3611. S or W-3612. S or W-3613.	12 12 12 12 12 12 12 12 12 12	24 30 36 42 48 54 60 66 72	42 42 42 42 42 42 42 42 42 42	333333333333333333333333333333333333333	S or W-7911. S or W-7912. S or W-7913. S or W-7914. S or W-7915. S or W-7916. S or W-7917.	12 12 12 12 12 12 12	61 67 73 67 73 73	74 74 74 74 74 74 74 74	8 8 8 20 20 20 26
S or W-3614 S or W-3615	12	78 84	42	3			<u> </u>		

Arrangement of Sections 79-Inch Boiler

Boiler Number	Arrangement 18-19 and 20 section based on actual grate length not over 72"	Actual Grate Length	Length of Fire Box	Grate Area Based on Fire Box Length
S or W-7907 S or W-7908 S or W-7909 S or W-7910 S or W-7911 S or W-7912 S or W-7913 S or W-7914	A-5C-H A-6C-H A-7C-H A-8C-H A-9C-H A-10C-H A-11C-H A-11C-H A-11C-BW-G-H	30 36 42 48 54 60 66 72 66	42 48 54 60 66 72 78 84 75	22,96 26,24 29,52 32,80 36,08 39,36 42,64 45,92 41,00
S or W-7915 S or W-7916 S or W-7917	A-12C-BW-G-H A-12C-BW-C-G-H	72 72	81 81	44.28 44.28

For Arrangement of Sections of 23-inch, 29-inch, 36-inch and 48-inch Boilers, see Ideal Fitter Catalogue pp. 29-30.

IDEAL WATER TUBE BOILER CHIMNEY SIZES FOR BOILERS IN BATTERY

29-INCH SERIES

	TW	O BOILE	RS	THE	REE BOIL	ERS _	FOUR BOILERS			
Number of Boiler	Rating Steam	Size Inches	Height Feet	Rating Steam	Size Inches	Height Feet	Rating Steam	Size Inches	Height Feet	
S or W-2905 S or W-2906 S or W-2907 S or W-2908 S or W-2909 S or W-2910 S or W-2911	3 200 4,000 4,800 5,600 6,400 7,200 8,000	16x16 16x16 16x20 16x20 20x20 20x20 20x24	40 45 45 50 55 60 65	4,800 6,000 7,200 8,400 9,600 10,800 12,000	16x20 16x20 20x20 20x20 20x24 20x24 20x24 24x24	45 45 50 55 60 60 65	6,400 8,000 9,600 11,200 12,800 14,400 16,000	20x20 20x20 20x24 20x24 24x24 24x24 24x24 24x28	50 50 55 55 55 60 60 65	

36-INCH SERIES

	1 TWO	BOILE	ERS	THRE	EE BOIL	ERS	FOU	R BOIL	ERS	FIVE	BOILE	ERS
Number of Boiler	Rating Steam	Size Ins.	Height Feet	Rating Steam	Size Ins.	Height Feet	Rating Steam	Size Ins.	Height Feet	Rating Steam	Size Ins.	Height Feet
S or W-3605 S or W-3606 S or W-3607 S or W-3608 S or W-3609 S or W-3610	5,000 6,300 7,600 8,900 10,200 11,500	16x20 20x20 20x20 20x24 20x24 24x24	50 50 55 55 60 60	7,500 9,450 11,400 13,350 15,300 17,250	20x20 20x24 20x24 24x24 24x24 24x24 24x28	55 55 60 60 65 65 70	10,000 12,600 15,200 17,800 20,400 23,000 25,600	20x24 24x24 24x24 24x24 24x24 24x24 28x28 28x28	60 60 65 65 70 70	12,500 15,750 19,000 22,250 25,500 28,750 32,000	24x24 24x28 24x28 24x28 28x32 28x32 28x32 28x32	65 65 70 70 75 75 80
S or W-3611 S or W-3612 S or W-3613 S or W-3614 S or W-3615	12,800 14,100 15,400 16,700 18,000	24x24 24x28 24x28 24x28 24x28 28x28	65 70 75 75 80	19,200 21,150 23,100 25,050 27,000	24x28 28x28 28x28 28x28 30x36	75 80 80 85	28,200 30,800 33,400 36,000	30x36 30x36 30x36 30x36 30x36	80 85 85 90	35,250 38,500 41,750 45,000	30x36 30x36 30x36 30x36 36x36	85 90 90 95

48-INCH SERIES

	1 TWO	BOIL	ERS	THRE	E BO	ILERS	FOUL	R BOII	ERS	FIVE	BOIL	ERS	SIX	BOILE	ERS
Number of Boiler	Rating Steam	Size Ins.	Height Feet	Rating Steam		Height Feet	Rating Steam		Height Feet	Rating Steam		Height Feet	Rating Steam	Size Ins.	Height Feet
S or W-4806 S or W-4807 S or W-4808 S or W-4809 S or W-4810 S or W-4811 S or W-4812 S or W-4813	15,500 18,000 20,500 23,000 25,500 28,000 30,500 33,000 35,500	28x28 30x36 30x36 36x36 36x36 36x42 42x42	80	23,250 27,000 30,750 34,500 38,250 42,000 45,750 49,500 53,250	30x36 36x36 36x42 36x42 42x42 42x42 42x48	80 85 85 90 95 105 110	31,000 36,000 41,000 46,000 51,000 56,000 61,000 66,000 71,000	36x42 42x42 42x42 42x48 42x48 48x48 48x48	80 85 90 90 95 100 105 110	38,750 45,000 51,250 57,500 63,750 70,000 76,250 82,500 88,750	42x42 42x48 42x48 42x48 48x48 48x54 48x54	90 95 95 100 105 110 115	46,500 54,000 61,500 69,000 76,500 84,000 91,500 99,000 106,500	42x42 42x48 48x48 48x54 54x54 54x54 54x60	90 95 100 100 105 110 115 120 120

79-INCH SERIES

Number	TWO	BOIL	ERS	THRE	E BOII	ERS	FOUR	BOIL	ERS	FIVE	BOIL	ERS	SIX I	BOILE	RS
of	Rating	Size	Height	Rating	Size	Height	Rating		Height			Height			Height
Boiler	Steam	lns.	Feet	Steam	Ins.	Feet	Steam	Ins.	Feet	Steam	Ins.	Feet	Steam	lns.	Feet
S or W															
7907	16,800	28x28		25,200	30x36	70									
7908	19,200	28x28		28,800	30x36	75	43,200	36x42	85						
7909 7910	21,600 24.000	28x32 28x32		32,400 36,000	36x36 36x36	80 85	48,000	36x42	90						
7911	26,400	30x36		39,600	36x42	90	52,800	42x42	95						
7912				43,200	36x42	95	57,600	42×42	100	72,000 78,000	42x48 42x48	105			
7913 7914	31,200	30x36		46,800 50,400	36x42 42x42	100 105	62,400 67,200	42x42 42x48	110	84.000	48x48		100.800	48x54	120
7914	36.000	36x36		54.000	42x42	110	72,000	42x48	115	90,000	48x48	120	108,000	48x54	125
7916	38,400	36x42		57,600	42x48	115	76,800	48x48	120	96,000	48x54	125	115,200	54x54	130
7917	40,800	36x42	1115	61,200	42x48	120	81,600	1 48x48	125	102,000	48x54	130	122,400	54x54	135

DATA

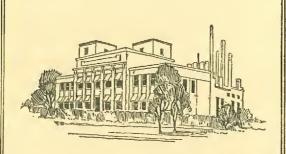
23- and 29-Inch Boilers are regularly supplied without Jacket but will be furnished with Ideal Asbestos-lined Metal Jacket on special order.

36- and 48-Inch Boilers are supplied without Jacket.

BOILER EQUIPMENT

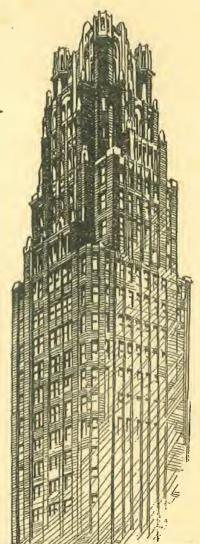
Steam Boilers—Steam Gauge. Pop-Safety Valve. Water Column and Trimmings. Firing Tools. Arco Automatic Damper Regulator.

Water Boilers—Ideal Damper Control, Firing Tools.



Institute of Chermal Research

THIS largest of all heating laboratories in the world is dedicated to the study of the science of heat and the practical application of the principles developed, to the end that Ideal Boilers may be worthy of their name.



LIST OF AMERICAN RADIATOR COMPANY BRANCH OFFICES AND SHOWROOMS

ATLANTA, GA. - - - - 232 Peachtree Street BALTIMORE, MD. - - - 1308 Lexington Building MILWAUKEE, WIS. - - - - 1801 St. Paul Avenue BOSTON, MASS. - - - - - 129 Federal Street NEW YORK, N. Y. - - - - - 40 West 40th Street BUFFALO, N. Y. - - - - 414 Jackson Building OMAHA, NEB - - - - 413 South 10th Street CHICAGO, ILL. - - - 816 South Michigan Avenue PHILADELPHIA, PA. - - - 25th & Reed Streets CINCINNATI, OHIO - - 710-712 Gwynne Building PITTSBURGH, PA. - - 337-339 Second Avenue CLEVELAND, OHIO - - - - 509 Hanna Building ST. LOUIS, MO. - - - - 4201 Duncan Avenue DENVER, COLO. - - - - 24th and Blake Streets ST. PAUL, MINN. - Prior and Minnehaha Avenues DETROIT, MICH. Broadway & E. Grand River Avenue SAN FRANCISCO, CAL. - 2nd & Townsend Streets INDIANAPOLIS, IND. - - - 401 Pennway Building SEATTLE, WASH - - - Utah & Holgate Streets

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